CAPACITOR-BASED STARTING SYSTEM AND ASSOCIATED METHODS

Abstract of the Disclosure

A system, capacitor having auxiliary cells, and associated methods for starting an engine is provided. The capacitor is an enhanced-power capacitor that provides enhanced cranking power. The capacitor is isolated from the battery and the rest of the engine's electrical system at preselected times. The capacitor is electrically connected to the alternator when the engine is running and is charged by the alternator. When the engine is not running, the capacitor is electrically isolated to prevent the capacitor discharging by powering accessory devices; the battery can power devices while the capacitor remains electrically isolated. During starting, the capacitor provides all the power supplied to the starter solenoid. If the battery is too weak to energize the electrical system during starting, an override allows the capacitor to provide power for all starting functions.